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Mr. Michalak,

Enclosed is a copy of Uranerz Energy Corporation's Groundwater Work Plan for the Nichols Ranch Uranium ISR Project for NRC review and comment. This plan was presented to the Wyoming Department of Environmental Quality – Land Quality Division (DEQ-LQD) and has been sent to them for their review and approval. The plan outlines Uranerz Energy Corporation's work plan for developing the groundwater section for its uranium in situ recovery mining permit. If you have any questions regarding this plan, please contact me at 307-265-8900 or by my email: <u>MThomas@uranerz.com</u>.

Sincerely,

Mike Thomas ESH Manager Uranerz Energy Corporation

enc.

GROUND-WATER WORK PLAN FOR THE HANK AND NICHOLS RANCH SITES

FOR: THE WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

BY: URANERZ ENERGY CORPORATION AUGUST 2006

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1.0 INTRODUCTION

Uranerz Energy Corporation is developing a mine permit for the Hank and Nichols Ranch sites in the Pumpkin Buttes area of Wyoming. This text outlines the proposed work plan for developing the ground-water section for the permit and is being submitted to the Department of Environmental Quality for agreement with the proposed work plan. A geologic setting of this area is first discussed and is followed by specifics for the Hank and Nichols Ranch sites.

2.0 GEOLOGIC SETTING

A large amount of geologic and hydrologic information has been established north of these sites for the North Butte mine permit and the old A.N.C. Brown project. Figure 1 shows a typical geologic section in this area with the sands names that have been used by the North Butte project and is being proposed for the two Uranerz projects. The first major sand in the section is the F Sand which is the mineralized sand at the Hank site. Underlying the F Sand is typically the C, B and A Sands which generally consist of significant thickness. The 1 Sand has been defined underneath the A Sand in some locations and the overlying sands above the F Sand are generally fairly marginal and have been named G, H and I Sands on this typical section. The underlying sand for the Hanks area will typically be the C Sand and the overlying sand for the Hanks area will be the G Sand if it exists and may be the H or I Sands in areas where they are the first sand overlying the F Sand.

The ore exists in the A Sand at the Nichols Ranch site. The aquitards adjacent to the A Sand are typically fairly thick as they are adjacent to the F Sand. The overlying sand for the Nichols Ranch site will be the B Sand and the underlying aquifer if it exists will be the 1 sand at the Nichols Ranch site.

3.0 HANK SITE

The Hank site typical electrical log is presented in Figure 2. Figure 3 shows the location of drill hole 69. This electric log box shows the F Sand with very marginal overlying sands above the F Sand. Typically a significant aquitard exists between the F Sand and the underlying C Sand.

Figure 3 shows the location of existing wells at the Hank site. The figure shows the proposed permit area with six existing wells shown within the permit area. Two of these wells, Hank and W42, are completed in the F Sand. Two additional wells are completed near the ore trend, while 2 additional wells are located on the western side of the permit area. Attempts will be made to determine the aquifer completion for the windmill in the southwest portion of Section 6. Additional wells that are shown completed on this figure are F Sand well W117, which is approximately 1.2 miles west of the permit area. Numerous wells exist to the north of the permit area that were installed during the investigation of the A. N. C. Brown Project. Several of these wells data will be very helpful in establishing the present conditions at the Hank site.

Three additional wells are proposed to be completed at the Hank site for further definition of the ground-water hydrology. These wells are shown on Figure 3 and will be

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completed in the F, C and G Sands. The F Sand well will be a partially penetrating well that will be completed only over the mineralized portion of the F Sand.

Figure 4 presents the water-level elevation for the F Sand. This figure shows water-level elevations that were collected in the late 1970s and early 1980s for these existing wells and shows that the gradient in the piezometric surface in the F Sand is mainly towards the west. Four quarters of water level data will be collected on the new wells at the Hank site and a minimum of 2 quarters of water-level measurements will be collected on the existing wells to define changes between the present and historical water levels.

A multi-well pump test will be conducted on the new F Sand well. Hantush (1964) partial penetrating well theory will be used to analyze the pump test. This pump test will be conducted for approximately 2 days to define the vertical connection between the F Sand and the two adjacent sands. Single well pump tests will be used for other wells to define the local transmissivity and hydraulic conductivities for each of the sands.

Figure 5 presents the existing water quality sample dates for wells from the F Sand aquifer. This figure shows the several water quality samples that have been collected from these existing wells. Four quarters of water quality samples will be collected from the new wells and 2 quarters of additional water quality samples will be collected from the existing wells and used with existing data to define water quality conditions for the aquifers in this area.

4.0 NICHOLS RANCH SITE

A typical electrical log for the Nichols Ranch site is presented in Figure 6. The location of the drill hole 77 is shown on Figure 7. The mineralization at the Nichols Ranch site is in the A Sand and this log shows a thick sand aquifer at this location. A good aquitard exists above the A Sand and between and below the B Sand. This log does not extend deep enough to determine if the 1 Sand is developed in this area, but the 1 Sand is expected to be used as the underlying aquifer for the Nichols Ranch site.

The location of wells that exist at the Nichols Ranch site is shown in Figure 7. This figure shows six wells that are completed in the A Sand within the permit area and one well that is completed in the B Sand. An eighth well is within the permit area at the old Nichols Ranch ranch. A cluster of 3 wells is shown north of the north east corner of the permit area and this cluster of wells is called the "BL4 wells". They are completed in the F, C and 1 Sands. Several additional wells exist to the south and west of the permit area and these wells will also be useful in defining the baseline conditions for the Nichols Ranch site.

Two new wells are proposed to be added at the Nichols Ranch site adjacent to an A Sand well. An overlying B Sand well and an underlying 1 Sand well are proposed to be added. The two proposed wells are shown on Figure 7.

Four quarters of water level monitoring will be developed for the wells within the Nichols Ranch permit area. Monitoring of the BL Wells which have some historical water levels will also be done to define changes in the aquifers since the early 1980s.

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Multi-well pump tests will be developed by pumping an A Sand well and monitoring the adjacent B and 1 Sand wells to determine if there is any vertical connection between the A Sand and the adjacent aquifers. Drawdowns will also be monitored in adjacent A Sand wells to define the aquifer properties in the A Sand aquifer in this area. Single well pump tests will also be conducted to define the local transmissivity in hydraulic conductivities for the A sand wells in this area.

Figure 8 shows the existing water quality sample dates for the Nichols Ranch site wells. This shows that historical water quality has been collected for the Nichols Ranch well and the three BL4 wells. Two samples will be taken from each of these existing sample points and four quarterly samples will be collected from the new wells to define the water quality conditions for the Nichols Ranch site.



DRILL HOLE 69

ייי דיא בטרית



-105° 57'

-105° 56'

-105° 55'

-105° 54'

-105° 53'

THIS PAGE IS AN OVERSIZED DRAWING OR FIGURE, THAT CAN BE VIEWED AT THE RECORD TITLED:

"FIG. 1 TYPICAL SAND SECTION"

WITHIN THIS PACKAGE... OR, BY SEARCHING USING THE DOCUMENT/REPORT

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